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DISCOVERIES AND CURRENT EVENTS *

Austria: The San José Scale (1).

During the autumn of 1931 the news spread of the introduction of the San José scale (*Aspidiotus perniciosus*) into Europe. In Austria it was particularly gardens in Vienna which were found to be infected, where in recent years fruit trees introduced from Hungary had been planted. A few other small centres of infection were found in nursery gardens and at some tree sellers' establishments. All the infected areas were however restricted to places where trees had been brought from abroad. In Austria these centres of infection were not extensive. Also the climate of Central Europe would not seem favourable to a serious spread of the pest.

The discovery of the invasion not, however, having been a pleasant surprise it has necessitated active measures of protection. Thus in Austria there has been no hesitation in completely destroying all the fruit trees known to be infected with the San José scale. They have been burnt on the spot by means of petrol.

As an experiment in a special case the trees were disinfected in a suitable chamber by means of hydrocyanic acid, which proved perfectly effective.

In order to prevent any further introduction of the pest it was of the highest importance for the Austrian Phytopathological Service to find the source of the infection from abroad. A few weeks of investigation sufficed to prove that the source of infection in Austria came from Hungary where considerable infection has been reported in the nursery gardens of Ujszeged and as early as Christmas 1928 in the region of Szombathely.

As it may reasonably be supposed that the San José scale has already invaded other European States from Hungary and elsewhere without having been reported, the Austrian Government has considered it necessary to take preventive measures not only against countries recognised to be infested but also to extend the measures so that they form a protection against any State in which the San José scale may exist without having been recognised. The Austrian Government has thus prescribed that all deciduous trees and shrubs being capable of carrying the scale must be inspected on importation into Austria by the Phyto-

* In this, as in the next chapter, the countries are arranged in French alphabetical order.

(1) Communication from the official correspondent of the Institute, Dr. Bruno WAHL, Director of the Federal Station for Plant Protection, Vienna.

pathological Service of the exporting country and must also be accompanied by a certificate issued by the Service stating that the plants have been submitted to a compulsory and effective disinfection by means of hydrocyanic acid.

Importation of such trees and shrubs may be allowed only by railway, ship or post. A special permit is also required. Finally, any consignment of living plants, including apples and pears, must be accompanied by a certificate issued by the Phytopathological Service of the exporting country.

Doubtless in the course of the next few years careful observation will reveal the presence of the San José scale in various European States. Very severe measures will be required to stamp out the pest completely. Austria has set the example.

The introduction of the San José scale constitutes a danger to Central Eurcpe comparable with that of the spread of potato wart disease and the Colorado beetle. It may be calculated that in our regions the San José scale would have three generations a year, which in view of the prolific fecundity of the insect is a considerable rate of multiplication.

On the other hand the scale has only restricted means of spreading rapidly, as is proved by the example of Austria, where the centres of infection have remained very small. In exceptional cases only has the infection from imported trees spread in their vicinity. As a precautionary measure, moreover, the vicinity of infected plants has been repeatedly disinfected with carbolineum or a lime sulphur spray in winter and with nicotine extract in summer. Free commerce in the infested regions has also been restricted and other measures of this nature have been taken.

Seeing that in Austria only the beginning of an invasion has been concerned it has been relatively simple to adopt the necessary measures to lead to the complete extermination of the pest.

Hungary: Introduction and Spread of the San José Scale and the Control Measures Adopted (1).

The presence of the San José scale (*Aspidiotus perniciosus* Comst.) in Hungary was recorded for the first time at the end of December 1928. It was on apples which had been sent from the commune of Kámon (Comitat of Vas) that the writer first observed the attack of the insect.

Systematic investigations were immediately undertaken in the affected region. Then, on the suggestion of the Hungarian Entomological Station all the region recognised to be infected, that is to say the whole district of Szombathely in the Comitat of Vas, plus a zone of protection, were put into quarantine by the Ministry of Agriculture, so that it was forbidden to export living plants or parts of living plants from the area in quarantine to any other part of the

(1) Communication from the official correspondent of the Institute, Mr. G. Bakó, Director of the Royal Hungarian Entomological Station, Budapest.

country. Within this area the transport of such products from one place to another was allowed only if inspection had shown them to be free from the San José scale.

Further investigations have revealed that there exists in Hungary in addition to the centre of infection mentioned another which is situated in the region of Szeged (Comitat of Csongrád). Control measures were immediately undertaken there also, consisting in careful inspection and treatment with carbolineum and lime sulphur in winter and nicotine in summer, and in the case of nursery garden products fumigation with hydrocyanic acid. In spite of these precautions a consignment of 5000 fruit trees for foreign export which contained some infected trees escaped detection. It is not certain however whether the insects were alive or whether they had been killed by treatment with hydrocyanic acid.

In consequence of this happening and others which occurred later the matter of the control of the San José scale was regulated anew for the whole country by Ministerial Decree No. 48 000/1932 of February 1932.

The main points of this Decree were the following :—

(1) In view of the international danger represented by the San José scale the control of the insect is made obligatory in the nursery gardens, fruit orchards, etc., throughout the whole country. The control must be carried out in accordance with the instructions of the Hungarian Entomological Station.

(2) The nursery gardens, horticultural establishments, fruit orchards, etc., will be inspected each year by experts of the said Station in collaboration with the local Commissions which must be organised in every commune. The commissions shall then effect any measures necessary and inform the Station of any observations made.

(3) The inspectors shall decide on the occasion of their annual visit whether or not each establishment is infected. Establishments certified absolutely free from the San José scale may freely consign their products to any place whatever by using a special certificate. Establishments found to be infected will be placed in quarantine, which entails that they may not send goods to establishments certified free from infection. Their products, if certified clean, may be marketed after fumigation with hydrocyanic acid under official supervision; if found to be infected they will be destroyed.

(4) Every consignment, even of a single tree, must be accompanied by a certificate conforming with the inspection report and issued by the local authority. For establishments certified clean white forms will be used ; for those infected a red form which will indicate that the product comes from an infected establishment but has been disinfected with hydrocyanic acid.

(5) For foreign export are admitted only those products which come from establishments and regions absolutely free from the San José scale. It is for this reason that it is forbidden to introduce into healthy establishments fumigated plants coming from infected establishments.

(6) A healthy establishment wishing to send a consignment abroad must inform the Entomological Station. The Station will send an expert to inspect the products during picking and packing and will affix seals to the packages and wagons and issue a certificate.

It will not be possible now to discover the source of the infection of Hungary. The country has never had direct dealings with America in the importation of nursery garden products and is not having such to day. Since, moreover, there are reasons which lead the Hungarian experts to exclude the possibility of the pest having been introduced in consignments of fruit, the only solution remaining is that it entered in the imports, which have always been considerable, of cuttings and other nursery garden products coming from a European country into which the San José scale has been introduced from America without having been detected. The Entomological Station is continuing the investigation of the subject while carrying on the work of control.

The San José scale has not by any means infested the whole of Hungary. With the exception of the two centres of infection in the Comitat of Vas (Szombathely region) and the Comitat of Csongrád-Csanád (Szeged region) the greater part of the country is still free. Only a small number of young trees have been infected which in recent years had been bought in infected regions before the pest had been detected and controlled. The complete suppression of the pest remains easily within the bounds of possibility.

Poland: Wheat Attacked by Black Rust (*Puccina graminis*) in 1932 (1).

From the southern part of Poland a serious outbreak of black rust (*Puccinia graminis* Pers.) is reported. The greatest losses occurred in the counties of Kielce, Lublin, Cracow, Lwow, Tarnopol, Volhynia, Silesia and certain districts in the adjoining counties of Stanislawów and Lódz. It is the main wheat growing region of Poland which supplies the other parts of the country where rye is the chief crop. Fortunately Poznan, Pomerania and the western part of the county of Warsaw, where wheat is also extensively grown, have escaped the rust.

It is remarkable that at the same time the absence is reported of the rust on rye, the most important grain crop in Poland and usually seriously attacked by this disease in certain regions of the country (Lublin).

It might be said that the biologic form of the indigenous black rust which particularly attacks rye has been replaced by biologic forms attacking wheat.

All the varieties of wheat grown have been about equally affected. More serious damage to barbed than to barbless wheat was occasionally observed.

LEGISLATIVE AND ADMINISTRATIVE MEASURES

Spain. — A Decree of 16 June 1932, contains regulations concerning the control of diseases and pests of the olive tree and rules for obtaining the efficient manufacture of olive oils.

(1) Communication from the official correspondent of the Institute, Dr. L. GARBOWSKI, Chief of the Plant Diseases Section of the National Institute of Agriculture, Bydgoszcz.

The following are the articles relating to diseases and pests of the olive :—

Art. 1. — Chiefs of Agronomic Sections who become informed of the occurrence of a disease or pest shall, together with the technical staff appointed for the purpose, inspect the attacked zone to determine the nature of the outbreak.

They shall make public the existence of the outbreak by all possible means ; they shall draw up and distribute in each zone leaflets of information setting forth in a clear and practical form the nature of the disease or pest and methods of prevention and control ; as many lectures and practical demonstrations as possible shall be given to interest and guide olive growers in control measures and to inform them of their legal obligations.

Art. 2. — The use of fumigants must be under the direction of the agronomic technical staff or of officials in possession of a certificate stating them to be trained in their use issued by the Phytopathological Stations, which shall organise the greatest possible number of rapid courses in the zones attacked.

When the outbreak is not of the kind to be controlled by fumigation the Agronomic Sections shall rapidly instruct the greatest possible member of labourers or olive growers in the preparation of insecticides and in the use of the necessary control equipment.

Art. 3. — The Agronomic Sections shall make widely known among olive growers the address and conditions of working of the firms which undertake fumigation and shall supply the latter with all useful information with regard to the zones attacked, the severity of the outbreak, etc.

Art. 4. — All farmers are under the obligation to carry out the treatments indicated by the Agronomic Service within the specified time which will be published in the ' Boletín Oficial ' of the province and by any other means considered advisable.

Any grower who fails to comply with the above regulations may not oppose any person who shall under the orders of the Chief of the Agronomic Section carry out control operations at his expense and at risk of offence occupy the plantation for purposes of public utility during the time necessary for the application of the treatment and charge him with an account of the expenses incurred, payment of which will if necessary be enforced by court of law without prejudice to the penalties liable under the agricultural diseases and pests law now in force.

Art. 5. — Agricultural Chambers, labourers associations, agricultural syndicates and other rural associations legally established in the province may undertake the carrying out of control operations in agreement with the owners of the plantations attacked, but in every case subject to supervision or inspection by the Government technical Service.

In cases in which the work carried out by such associations gives results which are satisfactory both as regards speed and efficacy, the Government expert concerned shall suggest to the competent authorities a grant proportional to the number of trees treated.

Art. 6. — The State may carry out the control free of charge as regards the equipment and insecticides used, for olive growers whose total income tax

does not exceed 25 pesetas per annum ; the growers on their part will be under the obligation to assist the workers in carrying out the control treatments.

The Agronomic Sections shall require from the respective communes a list of the olive growers in each commune indicating the numbers of olives owned by each.

Art. 7. — When in possession of these facts the Agronomic Sections shall in drawing up the annual budget of expenses for control measures, allow the largest sum possible for giving effect to the regulations laid down in the present Decree, taking into account that the method used for the control of the olive fly (*Dacus oleae*) shall be the Berlese method recommended by the Central Phytopathological Station ; the latter shall when any other process is considered to be better inform the ' Dirección General de Agricultura ' which will provide new regulations to this effect.

Art. 8. — The cooperation that the State shall accord to the olive grower in the control of the olive fly (*D. oleae*) shall consist in supplying free of charge the insecticides, insecticide depôts, spraying apparatus and the technical personnel necessary for practical demonstrations of the process to be used. The growers shall provide the labour required.

Art. 9. — Agronomic Sections which have at their disposal fumigation gangs for the control of the ' arañuela ' (*Liothrips oleae*) shall supply free of charge the tents, equipment for producing the hydrocyanic acid gas and the chief of the gang responsible for demonstrating the method of control to be used. The growers shall pay for the necessary labour.

Art. 10. — The cooperation of the State in the control of the olive leaf-spot (' repilo ' or ' vivillo ', *Cycloconium oleaginum*) shall consist in the gratuitous supply of the fungicides and the equipment required for applying them, also of an expert staff for giving practical demonstration of the treatment to be applied. After such demonstration the growers shall carry on the treatment on their own account.

Art. 11. — If the sum required for the control campaign as a result of this State cooperation exceeds the total of the receipts from the tax for pests and diseases earmarked for the purpose, the Agronomic Section shall inform the competent authorities indicating the amount of the difference so that they may meet the deficit.

Art. 12. — The State by the intermediary of its technical personnel shall effect any inspection necessary in order that the insecticides and fungicides used by the growers, agricultural associations and firms applying the control treatment, correspond with the required conditions of purity and are used in the right proportions and state.

The State shall also inspect the results of the treatments and shall take any steps considered necessary in case of defective procedure.

Art. 13. — In conformity with the regulations in force it shall be prohibited to sell insecticides and fungicidal preparations which are not accompanied with a certificate stating that they have been tested and approved by the competent Government Service.

Art. 14. — In view of the fact that the propagation of the olive fly (*D. oleae*) is mainly due to the crop being harvested too late, the chief experts of the Agronomic Sections in agreement with the Chambers of Agriculture shall decide for the respective zones, taking into consideration the climate, the varieties grown and the ripeness of the fruit, the date by which the crop must be picked, and that shall correspond with that settled for the latest variety and the coldest region in the province. The date decided on will be made known to the growers by the means specified in Art. 4. It will be liable to modification if the Agronomic Section in agreement with the Chamber of Agriculture considers it advisable in consequence of unexpected circumstances.

Art. 15. — At the end of the time officially fixed for the harvest if it shall be ascertained that any grower has not yet begun or has interrupted the picking of his crop without a cause considered justifiable by the Agronomic Section, the latter may immediately occupy the plantation to pick the fruit, charging the owner with an account of the expenses incurred. The Agronomic Section will have authority to resort to legal measures to enforce payment of the sum.

The local Committees for giving agricultural advice shall supply the Agronomic Sections with a list of any olive growers to whom the preceding paragraph is applicable. (*Gaceta de Madrid*, Madrid, 18 junio 1932, año CCLXXI, tomo II, núm. 170, págs. 2007 a 2009).

France. — By Ministerial Decree of 2 August 1932 the regulations contained in article 1 of the Decree of 8 March 1932 [see this *Bulletin* 1932, No. 4, p. 57] relating to measures for preventing the introduction into France of the San José scale (*Aspidiotus perniciosus*) are to apply to consignments coming from Austria and Hungary. The entry into and transit in France of fresh fruits coming from Austria and Hungary may take place only by way of the Customs Office of Kehl-Strasburg. (*Journal Officiel de la République Française*, Paris, 5 août 1932, LXIV^{ème} année, n. 182, p. 8581).

Italy. — By Law No. 967 of 3 June 1932, the Royal Decree-Law No. 197 of 19 March 1932 giving full and entire effect to the Convention of Commerce and Navigation between Italy and Spain settled at Rome on 15 March 1932 [see this *Bulletin*, 1932, No. 4, pp. 58-59], has been made Law. (*Gazzetta Ufficiale del Regno d'Italia*, Roma, 19 agosto 1932, anno 73°, n. 191, p. 3754).

*** By Ministerial Decree of 10 June 1932 the commune of Pietracupa in the province of Campobasso has been declared infected with grape phylloxera. (*Gazzetta Ufficiale del Regno d'Italia*, Roma, 22 giugno 1932, anno 73°, n. 143, p. 2970).

*** By Ministerial Decree of 4 July 1932 the commune of Rapolano in the province of Siena has been declared infected with grape phylloxera. (*Gazzetta Ufficiale del Regno d'Italia*, Roma, 13 agosto 1932, anno 73°, n. 187, p. 3711).

*** The Ministerial Circular No. 271 of 4 July 1932 contains the regulations governing exportation of plants and plant parts to Argentina in conformity with the Decree No. 03071/292 of 6 May 1932, which will come into force on 6 November 1932 in the Republic of Argentina. (*Bollettino Ufficiale del Ministero dell'Agricoltura e delle Foreste*, Roma, 1° agosto 1932, anno IV, n. 15, pp. 2214-2215).

Latvia. — The Administration of Agriculture published on 25 April 1932 regulations concerning the control of preparations against plant diseases and pests.

The Ministry of Agriculture exercises a control over the commerce in such products. Any fungicide or insecticide intended for commerce must be submitted to biological testing at the expense of the person concerned.

The Faculty of Agriculture of the University of Latvia and the Plant Protection Institute are responsible for carrying out the tests. A special committee will decide on the basis of the results of the trials whether or not a tested preparation shall be placed on the market.

On applying for a test the persons concerned shall state in writing the composition of the product and guarantee that this composition will be maintained.

It is forbidden to place on the market a product under a name not corresponding with its nature, or a patented product under a name other than that in which it is registered or to attribute to products qualities which have not been officially tested.

Toxic products must be made recognisable by means of a striking colour and a death's head must be affixed to the package. (*Deutsches Handels-Archiv*, Berlin 1932, 86. Jahrg., 2. Juliheft, S. 1501-1502).

Morocco (French Zone). — By Decree of the Director General of Agriculture, Commerce and Land Settlement dated 12 August 1932 the following regulations are established :—

Art. 1. — All sellers of sulphur must show on the delivery note or on the invoice, on the wrappings, containers or packing material, and on the advertisements, posters or price lists, the degree of fineness calculated in French silk mesh.

Art. 2. — The different forms of sulphur, indication of which must be given in conformity with the conditions specified in the preceding article, must correspond to the following characteristics :—

Sublimated sulphur or flowers of sulphur. — Product containing at least 98.5 % of pure sulphur, at most 0.5 % of ash and 0.5 % of moisture. This product must be constituted of amorphous particles in the form of utricles and of crystals ; the proportion of the latter not exceeding 10 to 12 %. The proportion of insoluble sulphur in carbon disulphide may vary between 12 and 33 %.

Triturated or ground sulphur. — Product containing at least 97 % of crystalline sulphur and at most 2 % of ash and 0.5 % of moisture.

Precipitated sulphur. — Product composed of very fine particles containing no crystalline sulphur. The pure sulphur content must correspond to that guaranteed by the seller, within a maximum variability of 2 %.

Other sulphur products: native sulphur, black sulphur, cupric sulphur, etc. — The free sulphur content of these products must be shown in accordance with the conditions specified in the preceding article. Also, in regard to cupric sulphur, the proportion of metallic copper contained must be mentioned in accordance with the provisions of the Decree of 12 June 1931 relating to the trade in copper compounds [see this *Bulletin*, 1931, No. 9, p. 167]. The nature of the chemical combination in which the copper is present must also be shown.

Colloidal sulphur. — This product must be stable and without deposit, and must be clear when diluted with distilled water. Its density at 20° C. and the degree of dilution at which it is to be used must be indicated in accordance with the prescriptions of the preceding article.

Art. 3. — The regulations of the Decree of 12 June 1931 relating to the trade in sulphur [see this *Bulletin*, 1931, No. 9, p. 167] are annulled. (Empire Chérifien. Protectorat de la République Française au Maroc. *Bulletin Officiel*, Rabat, 19 août 1932, XXI[ème] année, n° 1034, p. 963).

Netherlands (The). — On 7 September 1932, the Minister of the Netherlands at Rome deposited in the Royal Ministry for Foreign Affairs the ratification by his Government of the International Convention for Plant Protection, which was signed at Rome on 16 April 1929 [see this *Bulletin*, 1929, No. 4, pp. 50-55], accompanied by a declaration concerning the institutions referred to in Art. 2, Nos. 1 and 2, of the Convention (Art. 22). (*Gazzetta Ufficiale del Regno d'Italia*, Roma, 29 settembre 1932, anno 73°, n. 226, p. 4340).

Rumania. — On 15 August 1932 the Chargé d'Affaires of Rumania at Rome deposited in the Royal Ministry for Foreign Affairs the ratification by his Government of the International Convention for Plant Protection, which was signed at Rome on 16 April 1929 [see this *Bulletin*, 1929, No. 4, pp. 50-55], accompanied by a declaration concerning the institutions referred to in Art. 2, Nos. 1 and 2, of the Convention (Art. 22). (*Gazzetta Ufficiale del Regno d'Italia*, Roma, 29 settembre 1932, anno 73°, n. 226, p. 4340).

Yugoslavia. — By Ordinance No. 18300/II of 2 April 1932 the Minister of Agriculture has regulated the seed control in the following manner :—

Seed control for the internal commerce is carried out in accordance with the regulations approved by the VIth International Seed Control Congress which met at Wageningen 13 to 17 July 1931.

Every consignment for importation must be accompanied by the statement required by the international agreements. For seed of cereals, clover, lucerne, sainfoin and beet the statement must be coloured orange; for any other kind of seed it must be coloured blue. The statements must be written in French, English or German.

If the Yugoslav officials responsible for seed control find any statement issued by a foreign control station does not conform with the international requirements the statements of such station will not in future be accepted.

The importer must provide each consignment with a statement corresponding with the international regulations, which must be presented at the customs office. The latter will confirm that the statement is in conformity with requirements and on so finding will forward the consignment to the consignee. The customs office will also add the necessary indications on the statement and forward it to the competent control station.

Consignments will be delivered to the consignee without removal of samples. The control station however has the right to effect further inspection. Such inspection will be free of charge. Only in the case of consignments not being accompanied by an international statement will they be inspected on entry.

This Ordinance came into force one month after its official publication. (*Deutsches Handels-Archiv*, Berlin 1932, 86. Jahrg., 2. Juliheft, S. 1493-1494).

*** By Decree No. 22450/II of 22 April 1932 the Phytopathological Station of Sarajevo has been authorised to inspect living plants and plant waste imported or in transit. (*Deutsches Handels-Archiv*, Berlin 1932, 86. Jahrg., 2. Juliheft, S. 1489).

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[The deterioration is due to a combination of causes :— troubles of a physiological character, *Platyedra gossypiella*, *Earias biplaga*, *E. insulana*, *Syagrus rugiceps*, *Heliothis obsoleta*, *Diparopsis castanea*, *Pyroderces simplex*, *Dysdercus cardinalis*, *Oxycarenus hyalinipennis*, *Empoasca facialis*, *Aphis gossypii*, *Heliothrips indicus*, *Ramularia areola* (?), *Uredo Gossypii*, *Bacterium Malvacearum*, etc.].

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